Claims

1. (Currently Amended) A method for calibrating a vectorial network analyser having n measurement ports and at least 2n measurement locations (n>1), the method comprising:

~~by~~ successive measurement of the reflection and transmission parameters at k = sum (n-i) for (i = 1, 2, ..., n-1) or n-1 different two-port calibration standards, which are connected between the measurement ports in any desired order and ~~must~~ all have a transmission path, and three different n-port calibration standards, which are connected between the measurement ports in any desired order and are permitted to have no transmission; ~~transmission, by~~

mathematical determination of error coefficients of the network analyser with the 10-term method in the k-fold application and measured two-port calibration standards; and ~~by~~ mathematical determination of the scattering matrix $[S_x]$, in which the errors are corrected, with the 10-term method,

wherein the method further comprises:

a) carrying out the first k calibration measurements ~~are carried out~~ at a two-port, which is realized by means of the direct connection of the measurement ports (through connection, T = Thru) or a short matched line (L = Line) of known length and attenuation, and which is connected between each of the k possible measurement port combinations,

b) carrying out a further calibration measurement ~~is carried out~~ at an n-fold one-port (n-one-port), which is realized by means of n-known wave terminations (M = Match), wherein the n-known wave terminations have unrestricted values so that ~~which may~~ they can be different from each other,

c) carrying out a further calibration measurement ~~is carried out~~ at an n-one-port, which is realized by means of n-unknown greatly reflective terminations (R = Reflect), which are similar to short circuits (S = Short),

d) carrying out a further calibration measurement ~~is carried out~~ at an n-one-port, which is realized by means of n-unknown greatly reflective terminations (R = Reflect) which are similar to open circuits (O = Open) and

e) mathematically determining the reflection accounts of the n-one-ports that are~~,~~ ~~which is~~ realized by means of n-unknown greatly reflective terminations which are similar to open circuits or to short circuits~~, are mathematically determined~~.

2. (Currently Amended) A method for calibrating a vectorial network analyser having n measurement ports and at least 2n measurement locations (n>1), the method comprising:

~~by~~ successive measurement of the reflection and transmission parameters at n-1 different two-port calibration standards, which are connected between the measurement ports in any desired order and ~~must~~ all have a transmission path, and three different n-port

calibration standards, which are connected between the measurement ports in any desired order and are permitted to have no transmission; ~~transmission, by~~

mathematical determination of error coefficients of the network analyser with the 7-term method in the n-1-fold application and measured two-port calibration standards; and ~~by~~ mathematical determination of the scattering matrix $[S_x]$, in which the errors are corrected, with the 7-term method,

wherein the method further comprises:

a) carrying out the first n-1 calibration measurements ~~are carried out~~ at a two-port, which is realized by means of the direct connection of the measurement ports (through connection, T = Thru) or a short matched line (L = Line) of known length and attenuation, and which is connected between a reference measurement port and the remaining ports (n-1),

b) carrying out a further calibration measurement is carried out at an n-one-port, which is realized by means of n-known wave terminations (M = Match), wherein the n-known wave terminations have unrestricted values so that ~~which may~~ they can be different from each other,

c) carrying out a further calibration measurement ~~is carried out~~ at an n-one-port, which is realized by means of n-unknown greatly reflective terminations (R = Reflect), which are similar to short circuits (S = Short),

d) carrying out a further calibration measurement ~~is carried out~~ at an n-one-port, which is realized by means of n-unknown greatly reflective terminations (R = Reflect) which are similar to open circuits (O = Open) and

e) mathematically determining the reflection accounts of the n-one-ports that are~~,~~ ~~which is~~ realized by means of n-unknown greatly reflective terminations which are similar to open circuits or to short circuits

3. (Previously Presented) The method for calibrating a vectorial network analyser according to Claim 1, wherein

a) n>2 holds true,

b) the further calibration measurement is carried out at a one-port, which is realized by means of a known wave termination (M=Match), instead of at a n-one-port, which is realized by means of n-known wave terminations.

4. (Previously Presented) The method for calibrating a vectorial network analyser according to Claim 2 wherein

a) n>2 holds true,

b) the further calibration measurement is carried out at a one-port, which is realized by means of a known wave termination (M=Match), instead of at a n-one-port, which is realized by means of n-known wave terminations.

5. (Previously Presented) The method for calibrating a vectorial network analyser according to Claim 1 or 2, wherein the further calibration measurement is carried out at a (n-i)-one-port, wherein i<n, which is realized by a known wave termination (M=Match), instead of at a n-one-port, which is realized by means of n-known wave terminations.

6. (Previously Presented) The method for calibrating a vectorial network analyser Claim 1 wherein one of the greatly reflective terminations is known.

7. (Previously Presented) The method for calibrating a vectorial network analyser according to Claim 2 wherein one of the greatly reflective terminations is known.